

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2017-0506; Directorate Identifier 2017-CE-019-AD; Amendment 39-18907; AD 2017-11-08]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Diamond Aircraft Industries GmbH Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule; request for comments

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**SUMMARY:** We are adopting a new airworthiness directive (AD) for Diamond Aircraft Industries GmbH Model DA 42 airplanes. This AD results from mandatory continuing airworthiness information (MCAI) issued by the aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as failure of the propeller regulating valve caused by hot exhaust gases coming from fractured engine exhaust pipes. We are issuing this AD to require actions to address the unsafe condition on these products.

**DATES:** This AD is effective May 31, 2017. The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of May 31, 2017.

We must receive comments on this AD by July 17, 2017.

**ADDRESSES:** You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Diamond Aircraft Industries GmbH, N.A. Otto-Straße 5, A-2700 Wiener Neustadt, Austria, telephone: +43 2622 26700; fax: +43 2622 26780; email: [office@diamond-air.at](mailto:office@diamond-air.at); Internet: <http://www.diamondaircraft.com>. You may review this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City,

Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148. It is also available on the Internet at <http://www.regulations.gov> by searching for locating Docket No. FAA-2017-0506.

## **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0506; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Mike Kiesov, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4144; fax: (816) 329-4090; email: [mike.kiesov@faa.gov](mailto:mike.kiesov@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Discussion**

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued AD No. 2017-0090, dated May 17, 2017 (referred to after this as “the MCAI”), to correct an unsafe condition for Diamond Aircraft Industries GmbH Model DA 42 and DA 42 M airplanes. The MCAI states:

Two cases were reported of uncommanded engine in-flight shutdown (IFSD) on DA 42 aeroplanes. Subsequent investigations identified that these occurrences were due to failure of the propeller regulating valve, caused by hot exhaust gases coming from fractured engine exhaust pipes. The initiating cracks on the exhaust pipes were not detected during previous inspections, since those exhaust pipes are equipped with non-removable heat shields that do not allow inspection for certain sections of the exhaust pipe.

This condition, if not corrected, could lead to further cases of IFSD or overheat damage, possibly resulting in a forced landing, with consequent damage to the aeroplane and injury to occupants.

To address this potential unsafe condition, Diamond Aircraft Industries (DAI) developed an exhaust pipe without a directly attached integral heat shield that allows visual inspection over the entire exhaust pipe length. DAI issued Mandatory Service Bulletin (MSB) 42-120 and relevant Working Instruction (WI) WI-MSB 42-120, providing instructions to install the modified exhaust pipes. As an interim measure, an additional bracket was designed to hold the exhaust pipe in place in case of a pipe fracture. EASA issued AD 2016-0156 (later revised), requiring replacement of the exhaust pipes with pipes having the new design, or installation of the additional brackets.

Since EASA AD 2016-0156R1 was issued, cracks were found during inspection on modified exhaust pipes. Further investigation determined that, with the modified exhaust pipe design, vibration leads to cracking.

To address this potential unsafe condition, DAI published MSB 42-129 providing instructions for inspection of modified exhaust pipes.

For the reasons described above, this AD retains the requirements of EASA AD 2016-0156R1, which is superseded, and requires repetitive inspections of modified exhaust pipes and, depending on findings, repair or replacement. This AD is considered interim action and further AD action may follow upon availability of an improved exhaust pipe design.

You may examine the MCAI on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0506.

### **Related Service Information Under 1 CFR Part 51**

Diamond Aircraft Industries GmbH has issued Mandatory Service Bulletin MSB-42-129, dated May 17, 2017, and Work Instruction WI-OSB-42-122, Revision 2, dated June 24, 2016. Mandatory Service Bulletin MSB-42-129, dated May 17, 2017, describes procedures for inspecting the DAI part number (P/N) D60-9078-06-01\_01 and Technify P/N 52-7810-H0014 01 engine exhaust pipes. Work Instruction WI-OSB-42-122, Revision 2, dated June 24, 2016, describes procedures for (among other things) replacing the engine exhaust pipes. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section of the final rule.

### **FAA's Determination and Requirements of the AD**

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with this State of Design Authority, they have notified us of the unsafe condition described in the MCAI and service information referenced above. We are issuing this AD because we evaluated all information provided by the State of Design Authority and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design.

### **Differences Between the AD and MCAI**

The MCAI allows for either replacement or repair if a cracked exhaust pipe is found during an inspection. This AD will only allow for replacement. If there were to become a parts availability issue at some time, we would consider the welding repair as an alternative method of compliance.

In addition, the MCAI supersedes the previous EASA AD 2016-0156R1, which introduced the DAI part number (P/N) D60-9078-06-01\_01 and Technify P/N 52-7810-H0014 01 engine exhaust pipes that are the subject of this AD. The FAA is not superseding the corresponding AD 2017-01-12, Amendment 39-18779 (82 FR 5359; January 18, 2017) because there were other options in that AD that would not be affected by this action. Thus AD 2017-01-12 establishes the baseline for the applicability of this AD, and if any of the affected exhaust pipes were installed per AD 2017-01-12 they would be subject to the actions of this AD action.

The airplane models affected by the MCAI are the Models DA 42 and DA 42 M. Only the DA 42 is type certificated in the United States so this AD action will only affect the Model DA 42 airplanes.

### **FAA's Determination of the Effective Date**

An unsafe condition exists that requires the immediate adoption of this AD. The FAA has found that the risk to the flying public justifies waiving notice and comment prior to adoption of this rule

because the affected engine exhaust pipes could crack and cause hot gases to leak from fractured exhaust pipes and lead to an uncommanded engine in-flight shutdown. Therefore, we determined that notice and opportunity for public comment before issuing this AD are impracticable and that good cause exists for making this amendment effective in fewer than 30 days.

### **Comments Invited**

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2017-0506; Directorate Identifier 2017-CE-019-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

### **Costs of Compliance**

We estimate that this AD will affect 130 products of U.S. registry. We also estimate that it would take about 2 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour.

Based on these figures, we estimate the cost of the AD on U.S. operators to be \$22,100, or \$170 per product.

In addition, we estimate that any necessary follow-on actions would take about 2 work-hours and require parts costing \$2,100, for a cost of \$2,270 per product. We have no way of determining the number of products that may need these actions.

According to the design approval holder, some of the costs of this AD (cost of parts) may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

### **Authority for This Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs,” describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in “Subtitle VII, Part A, Subpart III, Section 44701: General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39–AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new AD:



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**2017-11-08 Diamond Aircraft Industries GmbH:** Amendment 39-18907; Docket No. FAA-2017-0506; Directorate Identifier 2017-CE-019-AD.

**(a) Effective Date**

This airworthiness directive (AD) becomes effective May 31, 2017.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Diamond Aircraft Industries GmbH Model DA 42 airplanes, serial numbers 42.004 through 42.427 and 42.AC001 through 42.AC151, certificated in any category, that have:

- (1) either a TAE 125-02-99 or TAE 125-02-114 engine installed; and
- (2) either DAI part number (P/N) D60-9078-06-01\_01 or Technify P/N 52-7810-H0014 01 engine exhaust pipes installed.

**(d) Subject**

Air Transport Association of America (ATA) Code 78: Engine Exhaust.

**(e) Reason**

This AD was prompted by cracks in the affected engine exhaust pipes, which could cause failure of the propeller regulating valve because of hot exhaust gases coming from the fractured pipes. We are issuing this AD to prevent an uncommanded engine in-flight shutdown or overheat damage, which could result in a forced landing, consequent damage, and occupant injury.

**(f) Actions and Compliance**

Unless already done, do the following actions.

(1) Before or upon accumulating 40 hours time-in-service (TIS) on the affected engine exhaust pipes or within the next 10 hours TIS after the effective date of this AD, whichever occurs later, and repetitively thereafter at intervals not to exceed 50 hours TIS, inspect each engine exhaust pipe following Diamond Aircraft Industries GmbH Mandatory Service Bulletin MSB-42-129, dated May 17, 2017.

(2) If any crack(s) is/are found on any engine exhaust pipe during any inspection required by this AD, before further flight, replace the affected engine exhaust pipe(s) following Step 14 (page 8) of Diamond Aircraft Industries GmbH Work Instruction WI-OSB-42-122, Revision 2, dated June 24, 2016.

(3) The replacement required by paragraph (f)(2) of this AD does not terminate the repetitive inspections required by paragraph (f)(1) of this AD when a DAI part number (P/N) D60-9078-06-01\_01 or Technify P/N 52-7810-H0014 01 engine exhaust pipe is installed.

## **(g) Other FAA AD Provisions**

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Mike Kiesov, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329-4144; fax: (816) 329-4090; email: [mike.kiesov@faa.gov](mailto:mike.kiesov@faa.gov). Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(2) Airworthy Product: For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) Reporting Requirements: For any reporting requirement in this AD, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW., Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

## **(h) Related Information**

Refer to MCAI EASA AD No.: 2017-0090, dated May 17, 2017, for related information. You may examine the MCAI on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0506.

## **(i) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Diamond Aircraft Industries Mandatory Service Bulletin MSB-42-129, dated May 17, 2017.

(ii) Diamond Aircraft Industries Work Instruction WI-OSB 42-122, Revision 2, dated June 24, 2016.

(3) For Diamond Aircraft Industries GmbH service information identified in this AD, contact Diamond Aircraft Industries GmbH, N.A. Otto-Straße 5, A-2700 Wiener Neustadt, Austria, telephone: +43 2622 26700; fax: +43 2622 26780; email: [office@diamond-air.at](mailto:office@diamond-air.at); Internet: <http://www.diamondaircraft.com>.

(4) You may view this service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148. It is also available on the Internet at <http://www.regulations.gov> by searching for locating Docket No. FAA-2017-0506.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Kansas City, Missouri, on May 19, 2017.  
Melvin Johnson,  
Acting Manager, Small Airplane Directorate,  
Aircraft Certification Service.